

CLAIMS

I Claim:

Sub  
C1 ~~P1~~

1. A computer system comprising:  
a bus;  
at least one memory coupled to the bus for storing data and programming instructions that include applications and an operating system;  
a processing unit coupled to the bus and running the operating system and applications by executing programming instructions, wherein an application has a first plurality of distinct programming interfaces available to access a plurality of separate sets of I/O services provided through the operating system via service requests.

2. The computer system defined in Claim 1 wherein each of the first plurality of distinct programming interfaces are tailored to a type of I/O service provided by each set of I/O services.

Sub  
C2 ~~P1~~

3. The computer system defined in Claim 1 wherein the operating system comprises a plurality of servers, and each programming interface transfers service requests to one of the plurality of servers, wherein each of the plurality of servers responds to service requests from clients of the separate sets of I/O services

3C

4. The computer system defined in Claim 3 wherein service requests are transferred as messages in a messaging system.

5. The computer system defined in Claim 4 wherein each of the plurality of servers supports a message port.

6. The computer system defined in Claim 3 wherein at least one of the plurality of servers is responsive to service requests from applications and from at least one other set of I/O services.

7. The computer system defined in Claim 3 wherein the operating system further comprises a plurality of activation models, wherein each of the plurality of activation models is associated with one of the plurality of servers to provide a runtime environment for the set of I/O services to which access is provided by said one of the plurality of servers.

8. The computer system defined in Claim 7 wherein at least one instance of a service is called by one of the plurality of servers for execution in an environment set forth by one of the plurality of activation models.

Sub  
C2 ~~10~~

9. A computer system comprising:  
a bus;

7

at least one memory coupled to the bus for storing data and programming instructions that comprise applications and an operating system;

a processing unit coupled to the bus and running the operating system and applications by executing programming instructions, wherein the operating system provides input/output (I/O) services through a distinct one of a plurality of program structures, each program structure comprising

a first programming interface for receiving service requests for a set of I/O services of a first type,

a first server coupled to receive service requests and to dispatch service requests to the I/O services, and

an activation model to define an operating environment in which a service request is to be serviced by the set of I/O services, and

at least one specific instance of the set of I/O services that operate within the activation model.

10. The computer system defined in Claim 9 wherein the first programming interface is responsive to request from applications and from other program structures.

11. The computer system defined in Claim 9 wherein the first programming interface comprises at least one library for converting functions into messages.

38

12. The computer system defined in Claim 9 wherein the first server receives a message corresponding a service request from the first programming interface, maps the message into a function called by the client, and then calls the function.

13. The computer system defined in Claim 9 wherein the message comprises a kernel message.

14. The computer system defined in Claim 9 wherein one of the said at least one specific instance comprises a service that accesses another program structure.

Sub C3 → 15. The computer system defined in Claim 14 wherein said one of said at least one specific instance communicates to said another program structure of a second type using a message created using a library sent to the server of said another program structure.

<sup>15</sup>  
~~16.~~ The computer system defined in Claim <sup>9</sup>~~8~~ wherein two or more I/O services share code or data.

<sup>16</sup>  
~~17.~~ The computer system defined in Claim <sup>15</sup>~~16~~ wherein said two or more I/O services are different types.

<sup>17</sup>  
~~18.~~ The computer system defined in Claim 9 wherein the program structure further comprises a storage mechanism to maintain

identification of available services to which access is provided via the first server.

C4 Sub B3

19. A computer implemented method of accessing I/O services of a first type, said computer implemented method comprising the steps of:

generating a service request for a first type of I/O services;

a family server, operating in an operating system environment and dedicated to providing access to service requests for the first type of I/O service, receiving and responding to the service request based on an activation model specific to the first type of I/O services;

a processor running an instance of the first type of I/O services that is interfaces to the file server to satisfy the service request.

<sup>19</sup>  
~~20.~~ The method defined in Claim <sup>18</sup>~~19~~ wherein the service request is generated by an application.

<sup>20</sup>  
~~21.~~ The method defined in Claim <sup>18</sup>~~19~~ wherein the service request is generated by an instance of an I/O service running in the operating system environment.

4